A.2.13 SWMU 22

Description

SWMU 22 was identified based on the indicated presence of TEL burials on the Refinery Leaded Burial Map. SWMU 22 consists of a suspected 20-foot by 20-foot TEL sludge burial located in the eastern portion of Tank Basin 329 in the North Field and is depicted on Figure A.2.11.

As summarized on Table A.2.11, data from 11 borings, 10 soil samples, one monitoring well groundwater sample and one hydropunch sample have been used to characterize this SWMU. Seven borings were installed during the 1st-Phase RFI. One sample (fill material) from SB0041 was collected for analysis of Skinner's List VOCs and SVOCs, lead, and TEL. During the Full RFI, nine soil samples were collected from three borings to further characterize this SWMU. Each of the nine soil samples collected was analyzed for TCL VOCs and SVOCs, lead and TOL. Two samples (S0776C4 and S0777B2) were also analyzed for SPLP lead and one sample (S0776) was analyzed for physical characteristics.[1]

Soils

The following table summarizes the number of samples where soil delineation criteria were exceeded within SWMU 22:

Constituents of Concern	Surface Soils (0 to 2 ft) (3 Samples)	Fill Material (>2 ft) (3 Samples)	Native Soils (4 Samples)	Totals (10 Samples)
Benzene	0/3	0/3	0/4	0/10
Other VOCs	0/3	1/3	0/4	1/10
Benzo(a)pyrene	0/3	1/3	0/4	1/10
Other SVOCs	0/3	1/3	0/4	1/10
TOL/TEL	0/3	0/3	1/4	1/10

Surface soils (0 to 2 feet bgs)

Some staining and/or odor was noted in surface soils in the borings at SWMU 17. However, surface soil samples submitted for analysis did not contain any VOCs, SVOCs, lead or TOL in excess of the soil delineation criteria.

Fill Materials (>2 feet bgs)

The lithologic descriptions on the boring logs indicate that visual evidence of petroleum staining, odors and/or PID readings greater than 100 ppm in the fill material were noted

[1]Physical characteristics specified in Appendix A, Task IV of Module III of the HWSA Permit included saturated and unsaturated permeability tests, moisture content, relative permeability, bulk density, porosity, soil sorptive capacity, CEC, TOC, pH, Eh and grain size distribution.

at several boring locations. The fill layer within SWMU 22 is less thick in this portion of the North Field, and ranges from approximately 1.5 feet (S0777) to 9.0 feet (U022-006).

As shown on the Table A.2.11, benzenethiol and several SVOCs (including benzo(a)pyrene) were detected above the applicable soil delineation criteria in the fill unit soil sample from SB0041 (two to four feet bgs). TEL/TOL was not detected above the soil delineation criteria in any of the fill unit samples.

Native Material

A clay/peat layer with a sand and/or meadow mat component underlies the fill material in this part of the Refinery at depths ranging from 1.5 to 9 feet bgs. No VOCs or SVOCs were detected above the applicable soil delineation criteria within the native soil at SWMU 22. TOL (7.1J mg/kg) was detected above the applicable soil delineation criterion in the peat sample (S0776D4) collected at 7.5 to 8 feet bgs. However, TOL was not detected above the applicable criteria within the surface soil or fill unit at this location. None of the other three native soil samples from SWMU 22 contained any COCs above the applicable soil delineation criteria.

As discussed further in Section 6 of the RFI Report, lateral delineation of selected COCs has been completed on a site-wide basis for each Yard. The delineation of these COCs is depicted graphically on the figures provided in Section 6.

Groundwater

Benzene (37 µg/L) and several other COCs were detected above the groundwater delineation criteria in a 1997 hydropunch sample (HP0019) from SWMU 22. However this sample was collected using traditional hydropunch methodology, and the presence of SVOCs and metals are not considered to be representative of ambient groundwater conditions. Furthermore, in a recent groundwater sample collected from MW-120, thallium (13.8J µg/L) was the only compound detected above the applicable groundwater criteria. Based on the 2002 data, it does not appear that activities conducted within SWMU 22 have impacted groundwater. Further discussion of groundwater impacts can be found in Section 8 of the RFI Report.

Summary

Several COCs, including, but not limited to, benzo(a)pyrene were detected at concentrations above their respective criteria at SWMU 22 in one soil/fill sample collected at two to four feet bgs. A second soil sample collected from the underlying peat layer contained TOL (7.1J mg/kg) above the applicable soil delineation criterion. Given that TOL was detected at a relatively low concentration in only one of ten samples (collected from the underlying peat layer), and that lead was not detected in any soil sample above the applicable soil delineation criteria, Chevron recommends additional sampling to confirm the presence of TEL in the peat. Institutional controls/engineered barriers for site-related impacted soils from the fill unit within SWMU 22 will be

considered in the CMS. Potential groundwater impacts in the vicinity of SWMU 22 will also be included in the CMS as part of the site-wide groundwater evaluation.